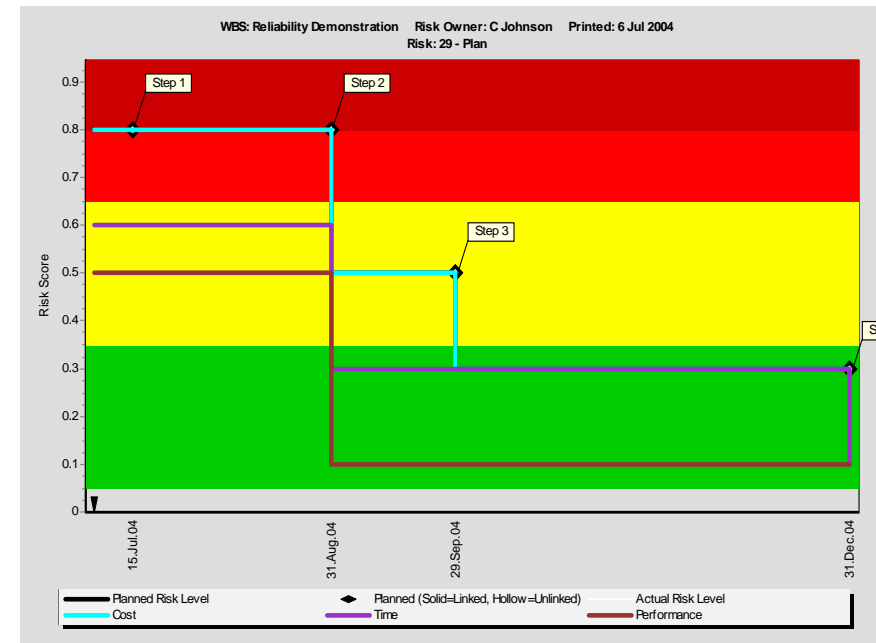
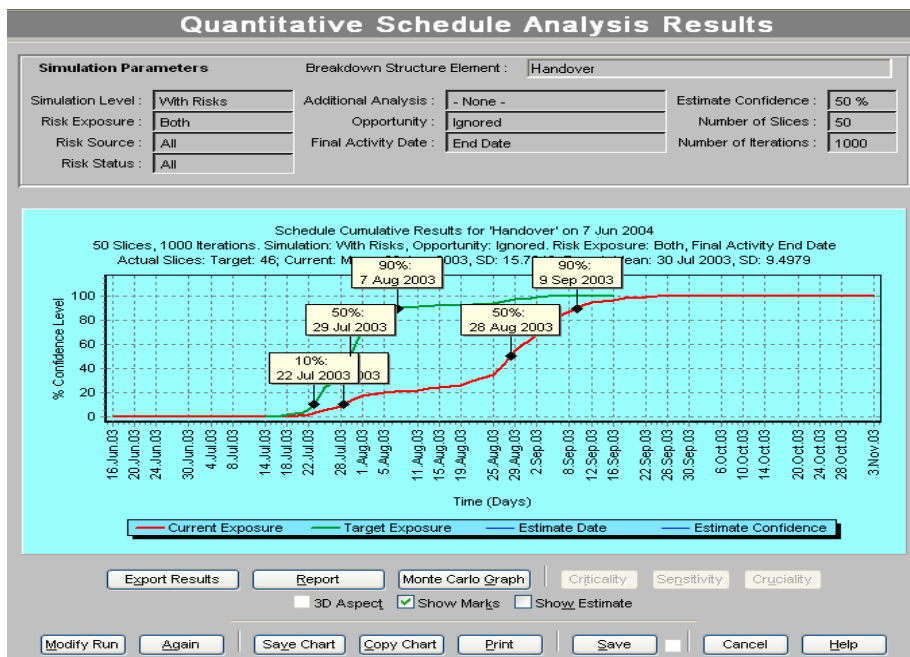




Active Risk Manager (ARM) Overview





What is Active Risk Manager (ARM)?

Active Risk Manager (ARM) is a cross-industry risk management system, with the ability to be configured and adapted across different sectors, projects, and processes. Active Risk Manager was launched in 2001 and was the first web-based, enterprise risk management system to market. Today, it has been proven in the world's largest global projects and corporations.

The original mission statement for Active Risk Manager still holds true today:

"To provide a scalable, enterprise-wide risk management solution that provides the right information to the right people at the right time in a secure fashion"

The system with its web-based, component approach has been designed with the help of leading organizations from multiple industry sectors (both public and private) and continues to be improved with input from our existing and prospective customers.

As a result, Active Risk Manager is the most comprehensive and proven enterprise risk management solution available for identifying, assessing, managing, controlling and communicating risk in compliance with project and operational initiatives, corporate governance standards and regulatory requirements.





Active Risk Manager (ARM) Features

Active Risk Manager has the following features to support NASA's Continuous Risk Management (CRM) Process:

- A fully web-based real-time enterprise solution to support disparate users.
- 3 tier architecture where scalability is maximized and allowing integration with ERP and shared data environments.
- Real-time and bi-directional integration with Microsoft Project™, Artemis™, Primavera and Telelogic Doors™.
- Qualitative and quantitative inputs and outputs.
- Cost and schedule Monte Carlo risk analysis (also other impacts e.g., heat, weight, etc.)
- Contingency planning and control.
- Knowledge base functionality making use of historical data.
- Provides a full risk management audit trail.
- Ability to recognize and manage risk as an opportunity as well as a threat.
- Automatic Email and SMS notification on key events and triggers.
- Tracks risk management action process and effectiveness.
- Enterprise wide reporting off any level of the work or project break down structure.
- Hyperlinks from all text fields to any relevant business documentation, management plans, files or web sites.
- Filter and roll-up capability of all break down structures.
- Advanced security levels supporting common industry standards.
- Enables user defined filtering to focus on key areas of interest.
- Extensive online help and customized tutorial tool options.
- Multiple Scoring Criteria Templates – to enable objective and consistent assessments.



ARM as Closed-Loop Risk Management Process

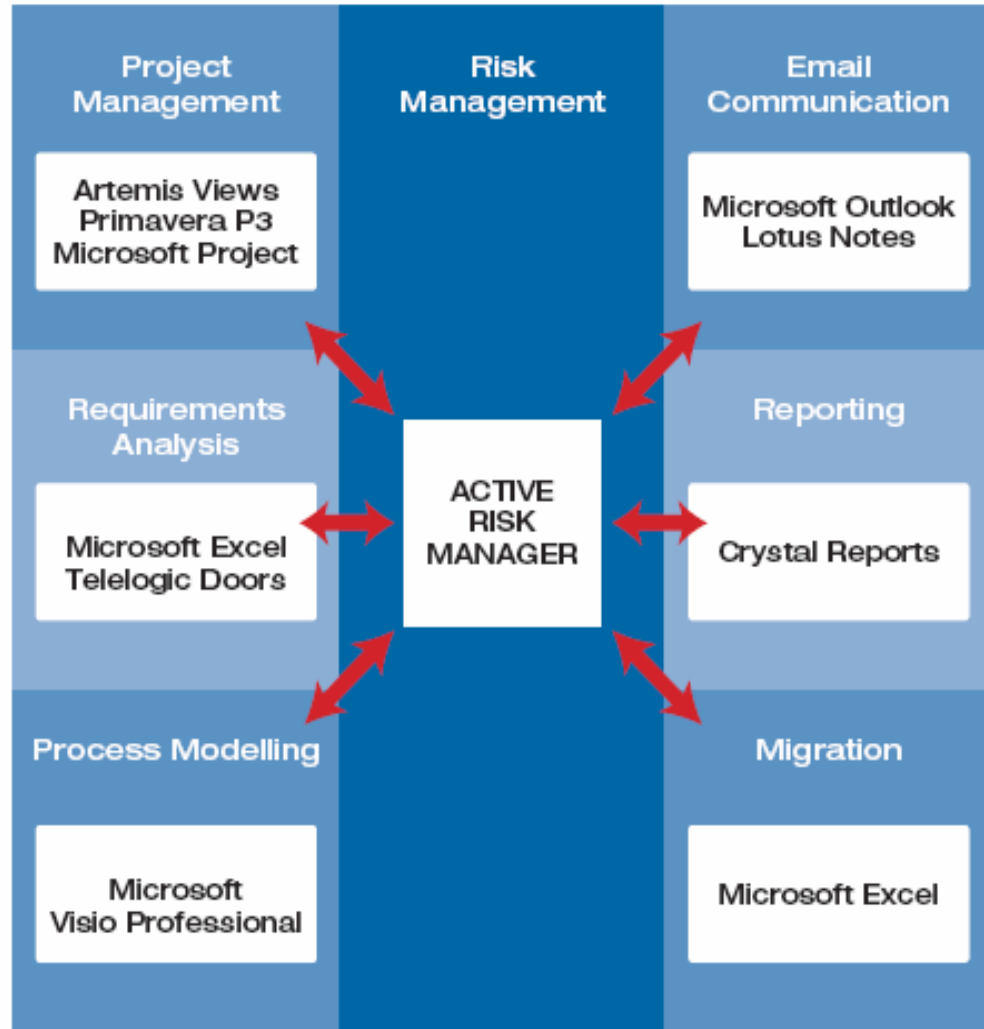
ARM supports a Closed-Loop Risk Management and is based around the provision of risk services to the entire enterprise, not just the Risk Managers. In any Project/Program, there are three enterprise levels: Executive, Managerial and Operational and these levels all have specific needs regarding their responsibility, accountability and interaction with the risk policy of the Program/Project. Each of these levels has a different requirement in terms of the timeliness of the information and the level of sophistication required from the supporting systems.





ARM Communication & Data Integration

“Communication is of paramount importance in any corporate environment, but time and time again we see risk systems complicating the process due to their lack of integration with management systems and inability to assess risk across the business.”



ARM data communication & integration with other Program/Project software tools.

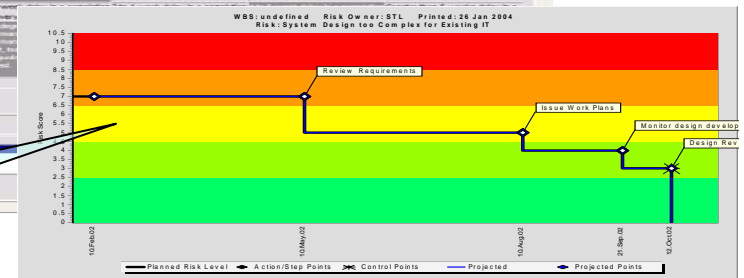
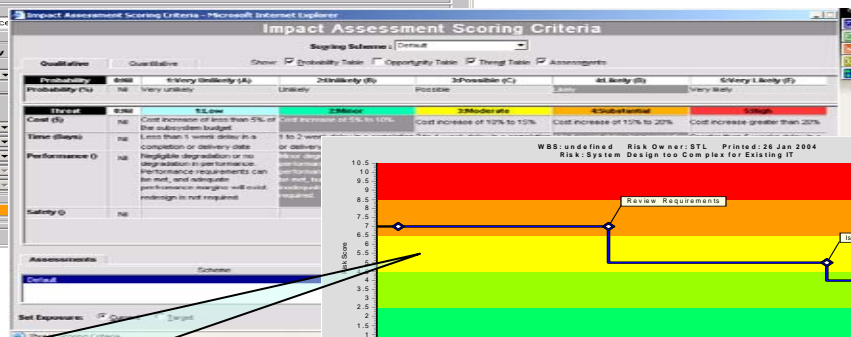


ARM Enterprise Implementation

Complete risk management can be performed from a single Risk Review Screen. This screen allows a single, simple and clear link to a WBS, project-related requirements and/or corporate requirements.

Each risk entry includes a complete identification description, analysis scoring and handling plan

Scoring criteria are tailored for each project, enabling a quick scoring process



Waterfall charts graphically forecast the risk handling plan and track actual schedule status using ARM

ARM Risk Access, Configuration & Security

ARM Business Area
Divided into three user areas: Requirements, Activities & Risks. This is where you access Activities & Risk Data.

ID	Risk Title	Owner	Status	Risk Level	Risk Category
Risk 11	Unclear Client Requirements	Karl Davey	Live	High	
59	System Integration More Complex Than Expected	Luke Watts	Draft	High	
60	Lack Of Proven Concept Design Strategy	Luke Watts	Draft	Moderate	
99	Acceptance Testing Limitations In Factory Environment.	Karl Davey	Impacted	Moderate	
15	Lack Of Proven Concept Design Strategy	Luke Watts	Live	Moderate	
39	Unclear Client Requirements	Luke Watts	Draft	Low	
34	Unforeseen Ground Conditions	Karl Davey	Live	Low	
42	Reliability May Exceed Requirement	Luke Watts	Draft	Moderate Opportunity	

SECURITY
Advanced multi-level security and ITAR/security caveats protection allows safe real-time joint risk registers and shared management.

Response ID	Title	Target	Due Date	Owner	Status
	Related Responses Of Risk ID: 34 - "Unforeseen Ground Cond..."				

Category	Permission	Status
Risk Operations	<input checked="" type="checkbox"/> Approve Risk	Active
	<input checked="" type="checkbox"/> Review Risk Templates	
	<input checked="" type="checkbox"/> Edit Scoring Scheme	
	<input checked="" type="checkbox"/> Add Risk	
Plan Operations	<input checked="" type="checkbox"/> Add Plan	Active
	<input checked="" type="checkbox"/> Update Plan	
	<input checked="" type="checkbox"/> Delete Plan	
	<input checked="" type="checkbox"/> Add Response	
Response Operations	<input checked="" type="checkbox"/> Update Response	Active
	<input checked="" type="checkbox"/> Delete Response	
	<input checked="" type="checkbox"/> Import/Link/Export Responses	
	<input checked="" type="checkbox"/> Update Response	
Business Area & Folder Control	<input checked="" type="checkbox"/> Add Activity/Requirement/Folder	Active
	<input checked="" type="checkbox"/> Update Activity/Requirement/Folder	
	<input checked="" type="checkbox"/> Import Project & Risk Data	
	<input checked="" type="checkbox"/> Update Business Area & Folder	
Charts & Reports	<input checked="" type="checkbox"/> Quantitative Impact Analysis	Active
	<input checked="" type="checkbox"/> Risk Profile	
	<input checked="" type="checkbox"/> Load Schedule Results	
	<input checked="" type="checkbox"/> Copy/Save a Chart	
Administration	<input checked="" type="checkbox"/> Business Administration	Active
	<input checked="" type="checkbox"/> ARM Administration	
	<input checked="" type="checkbox"/> General Audit Search	
	<input checked="" type="checkbox"/> Edit Score History	
Resources / Users	<input checked="" type="checkbox"/> Add Resource/User	Active
	<input checked="" type="checkbox"/> View Own User Details	
	<input checked="" type="checkbox"/> User Groups Configuration	
	<input checked="" type="checkbox"/> Preview User Security	

CONFIGURATION
Flexible user-configurable terminology, methodology, functionality and risk process.



ARM Risk Entry – Detailed View & Fast View

Active Risk Manager - wsa:Example Organisation - Microsoft Internet Explorer

ACTIVE RISK MANAGER DETAIL VIEW

File Edit New View Link Analysis Reports Tools Help

Risk Impact Plan Response Add Another Save X

Overall Risk Status

ID: 34 Title: Unforeseen Ground Conditions Owner: Karl Davey Status: Live

Risk / Issue: Interested Parties Risk Raised By: Karl Davey Category:

Approved? Yes Risk Relationship Risk Cost: £ 125000 Phase: Undefined

Cause

Lack of Surveys

Risk Description

Unforeseen Ground Conditions may occur due to the unknown condition of the site ground works

Effects

Delays due to obstructions

Impacts from Related BBS Structure

ID	Name
38	Preliminary Works

Dates

Initiation: 24 Oct 2003 Approval: 24 Oct 2003

Risk Detail Record

Detailed View risk entry screen for users with either low or high risk maturity levels

Fast Risk View - Microsoft Internet Explorer

Fast Risk View

Risk For Activity: Preliminary works

Risk ID Risk Title * Risk Owner * Risk Category

1 Unforeseen Ground Conditions Jacob Smith Operational

Risk Status: Open **Risk / Issue:** Risk **Raised By:** Emily Jones **Approved**

☒ **Risk Description**

Impact Group: Internal **Scoring Scheme:** Default

Current Exposure ☒ Threat ☐ Opportunity **Target Exposure** ☒ Threat ☐ Opportunity

Probability: 4: Significant **Probability:** 1: Low

Impacts

Cost (\$)	Impact
	2: Minor
Time (Days)	Impact
	2: Minor

Risk Level: 0.4 Moderate 13 Nov 2001 **Risk Level:** 0.2 Low 10 Apr 2003

Risk Initiation Date **Target Resolution Date**

OK Save Add Another Reset Cancel Help More ->

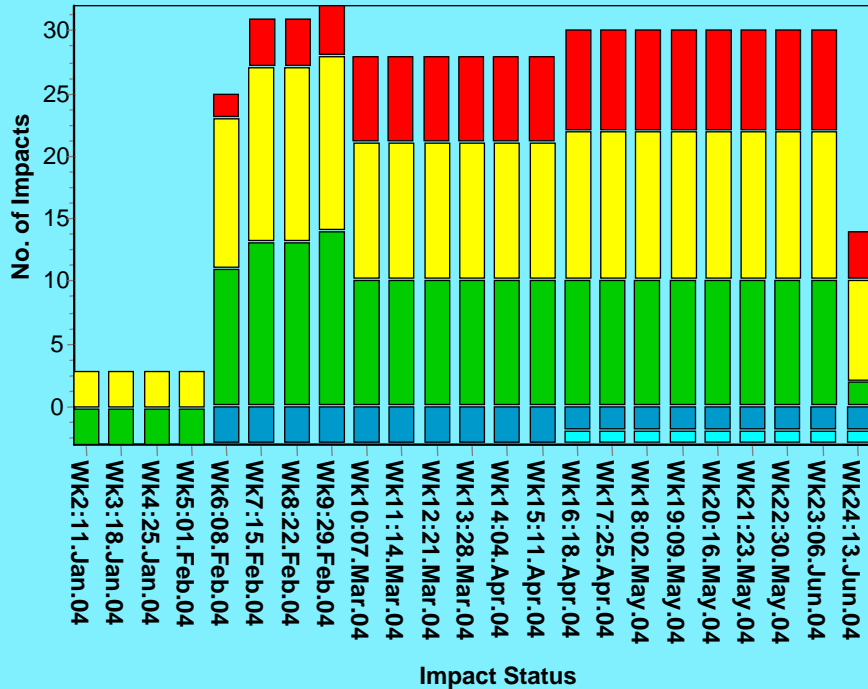
Fast Risk View Local intranet

Fast Risk View screens provide users for quick & complete data entry either low or high risk maturity levels



ARM Risk Analysis Capabilities

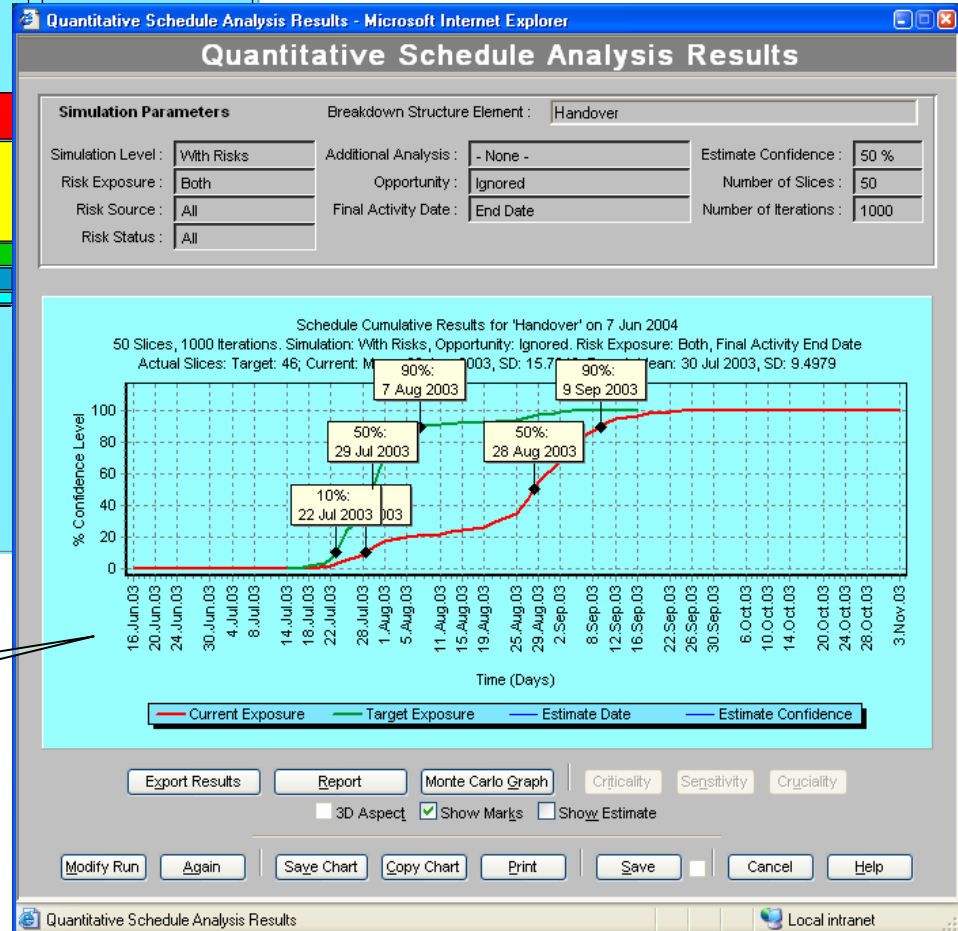
Impact Trend broken down by Risk Level
for period from: 8 Jan 2004 to: 8 Jun 2004
Activity: Example Organization
Include Children: On, Period Type: Weekly



Moderate Opportunity
Minor Opportunity
Low
Moderate
High

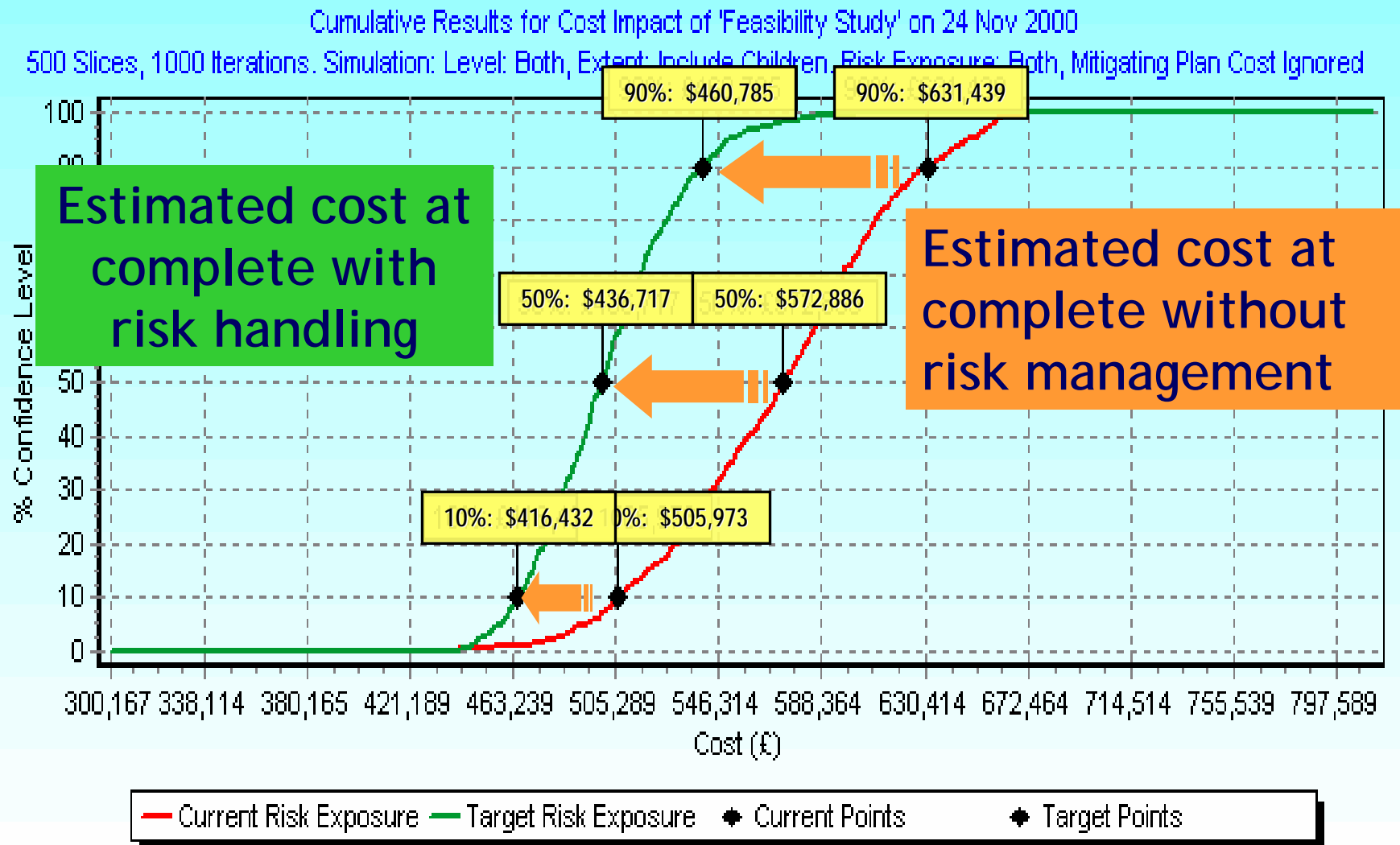
Powerful integrated Monte Carlo 3-point estimating provides risk history trend reporting.

Quantitative Schedule Analysis reporting provides risk history trend reporting.





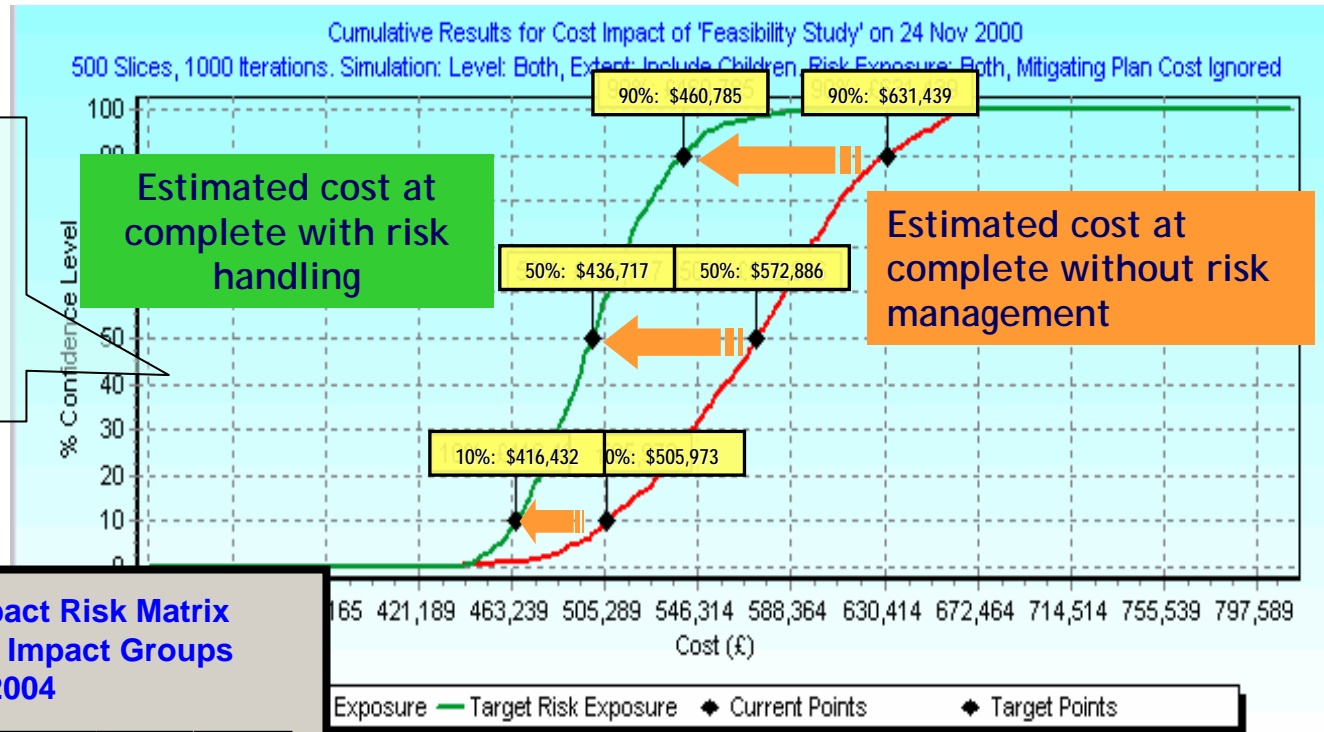
ARM Reporting - Sample Budget Impact Assessment Using Monte Carlo Analysis





ARM Graphical Reporting of Budget Status & Risk Probability X Impact

Full integration of graphical and tabular standards along with custom report functionality



Probability vs. Impact Risk Matrix
All Risk Status, All Impact Groups
8 Jun 2004

P R O B A B I L I T Y	High			11	8	
	Significant	15		59		
	Moderate	34	99	60		
	Minor	39				
	Low					
		Low	Minor	Moderate	Significant	High
IMPACT						

Seamless integration of Risk Matrix (Probability X Impact) for overall Program/Project status.



ARM Risk Scoring Criteria Capability & Risk Waterfall presentation

Risk Impact Plan Response

Overall Response Status

ID: 3 Title: Plan survey and testing program

Linked Activity ID: Target Risk Level: 0.6

Response Description

Response Comments

Response Dates Start: 04 Dec 2004

Related Response Details

ID	Description
1	Develop Site Plan
3	Plan Survey And Testing Prog
4	Implement Survey Programme
5	Review Results And Plan Sec
6	Undertake Second Surveys A
7	Produce Work Plan Based On
8	Decision Date

Owning Plan ID: 1 Name: Addition

Risk Scoring Criteria Summary - Microsoft Internet Explorer

Risk Scoring Criteria Summary

Scoring Scheme: Tooling

Qualitative Quantitative Show: ☒ Probability Table ☐ Opportunity Table ☒ Threat Table ☒ Assessments

Probability	0:Nil	1:Low	2:Minor	3:Moderate	4:Significant	5:High
Probability (%)	Nil	Low Probability	Minimum Probability	Moderate Probability	Significant Probability	High Probability

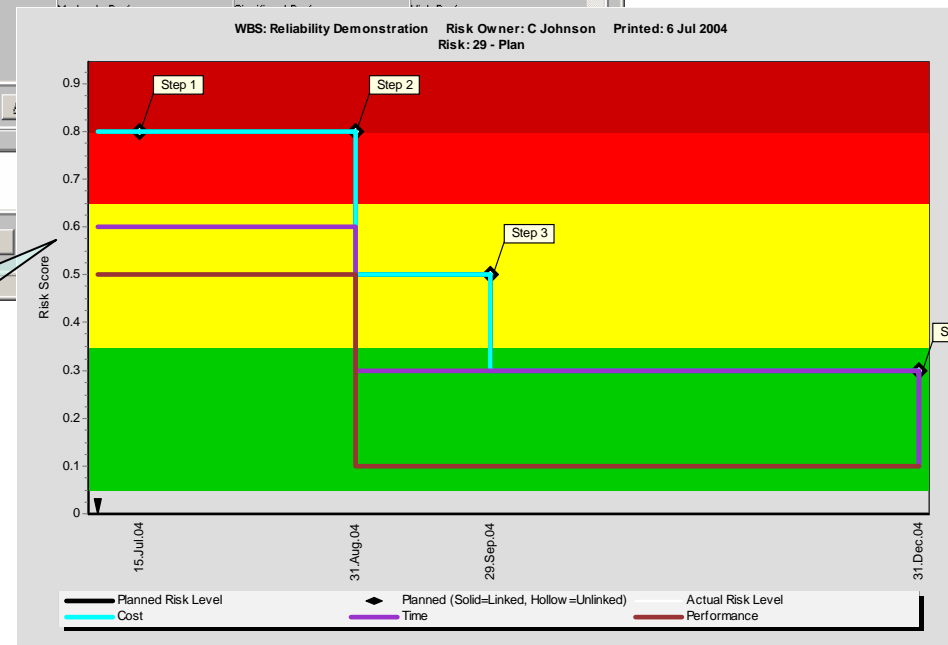
Threat	0:Nil	1:Low	2:Minor	3:Moderate	4:Significant	5:High
Cost (£)	Nil	No impact on milestones	Overrun to the budget for the effected activities of 1% or greater	Overrun to the budget for the effected activities of 5% or greater	Overrun to the budget for the effected activities of greater than 5%	Overrun to the budget exceeds Mgt Reserve
Time (Days)	Nil	No impact on milestones	No impact on critical path milestone. Up to 2-week delay to non-critical path	Up to one month impact on critical path milestone. Up to 1 month delay to non-critical path milestone	1 to 3 month impact on critical path	Greater than 3 months impact on the critical path
Performance (%)	Nil	Weight - negligible change Performance - Negligible performance Component Cost - negligible impact	Minimum Performance			

Assessments

Default

Set Exposure: ☒ Current ☐ Target

OK



Impact Waterfalls Charts divides waterfall charts by the risk level for each impact category



ARM Implementation at Marshall Space Flight Center

The ARM database is being used at NASA Headquarters by the Exploration Systems Mission Directorate (ESMD) and by Office of Safety and Mission Assurance (OSMA).

For further information on ARM please use the following URL:
http://www.strategicthought.com/QuickPlace/stlwebsite/Main.nsf/h_Toc/7B4F7FAE599D005988256DEA00726129/?OpenDocument

**For information on the NASA ARM Contract, please contact:
Strategic Thought on 571.203.7287**

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Karl Pringle, ARM US Sales (571) 203-7287

Lita Cuen, STL, Inc., NASA Account Manager (310) 406-5684